

Abstract of the Disclosure

The present invention provides for improved parallel interference cancellation. An input signal composed of multiple user signals is processed over a select time duration. The input signal is separated into individual signals corresponding to each of the multiple users and demodulated to recover symbols for each of the individual signals. The recovered symbols are processed based on the consistency of previous estimates of the given symbol to provide weighted symbol estimates. The respective weighted symbol estimates for each of the users are modulated with the appropriate coding and processed using channel estimates to create individual, regenerated signals. For each user, the regenerated signals for the other users are subtracted from the original input signal to form new individual signals. The new individual signals are each demodulated and reprocessed for multiple iterations. The output of the last iteration is used to form the final symbol decisions for each user signal.